WIKIPEDIA
The Free Encyclopedia

Wikidata

Wikidata is a collaboratively edited multilingual knowledge graph hosted by the Wikimedia Foundation.[2] It is a common source of open data that Wikimedia projects such as Wikipedia,[3][4] and anyone else, are able to use under the CC0 public domain license. Wikidata is a wiki powered by the software MediaWiki, including its extension for semi-structured data, the Wikibase. As of early 2025, Wikidata had 1.65 billion item statements (semantic triples).[5]

Wikidata

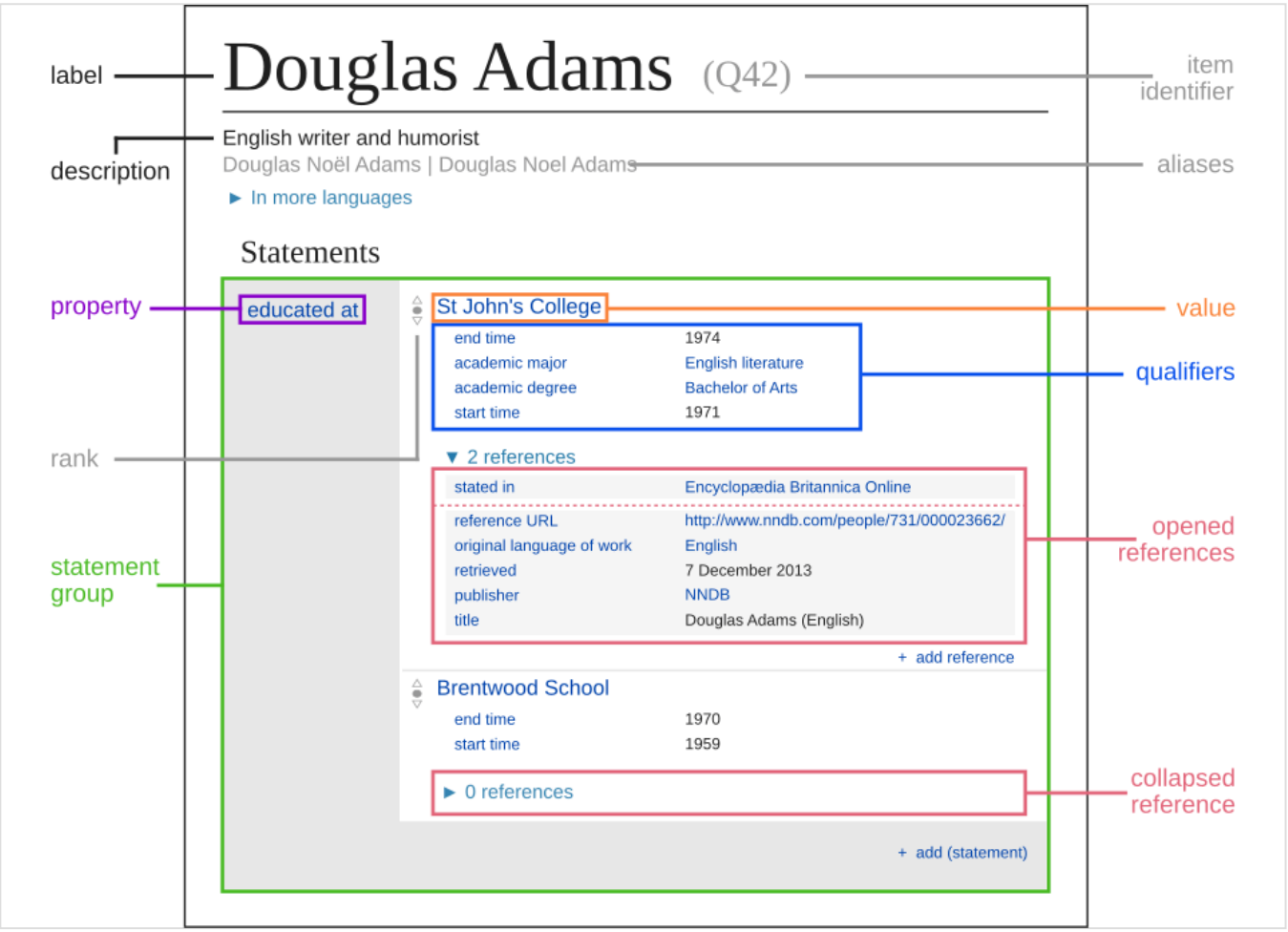
WIKIDATA

Screenshot

Main page of Wikidata in April 2021

Type of site	Knowledge base · Wiki
Available in	Multiple languages
Owner	Wikimedia Foundation
Editor	Wikimedia community
URL	www.wikidata.org/wiki/Wikidata:Main_Page (https://www.wikidata.org/wiki/Wikidata:Main_Page)
Commercial	No
Registration	Optional
Launched	29 October 2012[1]

Concept



This diagram shows the most important terms used in Wikidata.

Wikidata is a document-oriented database, focusing on items, which represent any kind of topic, concept, or object. Each item is allocated a unique, persistent identifier, a positive integer prefixed with the upper-case letter Q, known as a "QID". Q is the starting letter of the first name of Qamarniso Vrandečić (née Ismoilova), an Uzbek Wikimedian married to the Wikidata co-developer Denny Vrandečić.[6] This enables the basic information required to identify the topic that the item covers to be translated without favouring any language.

Examples of items include 1988 Summer Olympics (Q8470), love (Q316), Johnny Cash (Q42775), Elvis Presley (Q303), and Gorilla (Q36611).

Item labels do not need to be unique. For example, there are two items named "Elvis Presley": Elvis Presley (Q303), which represents the American singer and actor, and Elvis Presley (Q610926), which represents his self-titled album. However, the combination of a label and its description must be unique. To avoid ambiguity, an item's unique identifier (*QID*) is hence linked to this combination.

Main parts

A layout of the four main components of a phase-1 Wikidata page: the label, description, aliases, and interlanguage links

Fundamentally, an item consists of:

- An identifier (the QID), related to a label and a description.
- Optionally, multiple aliases and some number of statements (and their properties and values).

Statements

Three statements from Wikidata's item on the planet Mars (Q111). Values include links to other items and to Wikimedia Commons.

Statements are how any information known about an item is recorded in Wikidata. Formally, they consist of key–value pairs, which match a *property* (such as "author", or "publication date") with one or more entity *values* (such as "Sir Arthur Conan Doyle" or "1902"). For example, the informal English statement "milk is white" would be encoded by a statement pairing the property color (P462) with the value white (Q23444) under the item milk (Q8495).

Statements may map a property to more than one value. For example, the "occupation" property for Marie Curie could be linked with the values "physicist" and "chemist", to reflect the fact that she engaged in both occupations.[7]

Values may take on many types including other Wikidata items, strings, numbers, or media files. Properties prescribe what types of values they may be paired with. For example, the property official website (P856) may only be paired with values of type "URL".[8]

Optionally, *qualifiers* can be used to refine the meaning of a statement by providing additional information. For example, a "population" statement could be modified with a qualifier such as "point in time (P585): 2011" (as its own key-value pair). Values in the statements may also be annotated with *references*, pointing to a source backing up the statement's content.[9] As with statements, all qualifiers and references are property–value pairs.

Properties

Example of a simple statement consisting of one property–value pair

Each property has a numeric identifier prefixed with a capital P and a page on Wikidata with optional label, description, aliases, and statements. As such, there are properties with the sole purpose of describing other properties, such as subproperty of (P1647).

Properties may also define more complex rules about their intended usage, termed *constraints*. For example, the capital (P36) property includes a "single value constraint", reflecting the reality that (typically) territories have only one capital city. Constraints are treated as testing alerts and hints, rather than inviolable rules.[10]

Before a new property is created, it needs to undergo a discussion process.[11][12]

The most used property is cites work (P2860), which is used on more than 290,000,000 item pages as of November 2023.[13]

Lexemes

Wikidata Klingon lexeme entry

In linguistics, a lexeme is a unit of lexical meaning representing a group of words that share the same core meaning and grammatical characteristics.[14][15] Similarly, Wikidata's *lexemes* are items with a structure that makes them more suitable to store lexicographical data. Since 2016, Wikidata has supported lexicographical entries in the form of lexemes.[16]

In Wikidata, lexicographical entries have a different identifier from regular item entries. These entries are prefixed with the letter L, such as in the example entries for book and cow. Lexicographical entries in Wikidata can contain statements, senses, and forms.[17] The use of lexicographical entries in Wikidata allows for the documentation of word usage, the connection between words and items on Wikidata, word translations, and enables machine-readable lexicographical data.

In 2020, lexicographical entries on Wikidata exceeded 250,000. The language with the most lexicographical entries was Russian, with a total of 101,137 lexemes, followed by English with 38,122 lexemes. There are over 668 languages with lexicographical entries on Wikidata.[18]

Entity schemas

In Wikidata, a schema is a data model that outlines the necessary attributes for a data item.[19][20] For instance, a data item that uses the attribute "instance of" with the value "human" would typically include attributes such as "place of birth," "date of birth," "date of death," and "place of death."[21] The entity schema in Wikidata utilizes Shape Expression (ShEx) to describe the data in Wikidata items in the form of a Resource Description Framework (RDF).[22] The use of entity schemas in Wikidata helps address data inconsistencies and unchecked vandalism.[19]

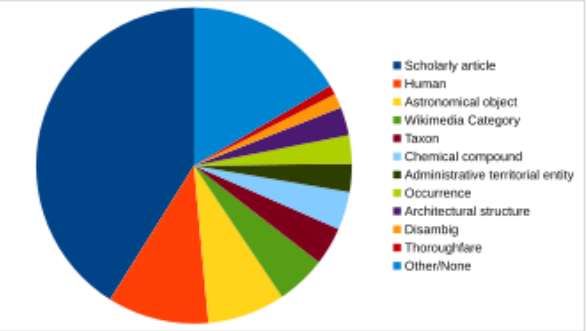
In January 2019, development started of a new extension for MediaWiki to enable storing ShEx in a separate namespace.[23][24] Entity schemas are stored with different identifiers than those used for items, properties, and lexemes. Entity schemas are stored with an "E" identifier, such as E10 for the entity schema of human data instances and E270 for the entity schema of building data instances. This extension has since been installed on Wikidata[25] and enables contributors to use ShEx for validating and describing Resource Description Framework data in items and lexemes. Any item or lexeme on Wikidata can be validated against an entity schema, and this makes it an important tool for quality assurance.

Human entity schema in Wikidata

Content

Wikidata's content collections include data for biographies,[26] medicine,[27] digital humanities,[28] scholarly metadata through the WikiCite project.[29]

It includes data collections from other open projects including Freebase (database).[30]



Items for scholarly articles are the biggest part of Wikidata, followed by the collection of biographies.

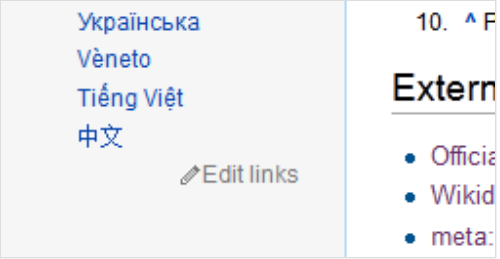
Development

The creation of the project was funded by donations from the Allen Institute for AI, the Gordon and Betty Moore Foundation, and Google, Inc., totaling €1.3 million.[31][32] The development of the project is mainly driven by Wikimedia Deutschland under the management of Lydia Pintscher, and was originally split into three phases:[33]

1. Centralising interlanguage links – links between Wikipedia articles about the same topic in different languages.
2. Providing a central place for infobox data for all Wikipedias.
3. Creating and updating list articles based on data in Wikidata and linking to other Wikimedia sister projects, including Meta-Wiki and the own Wikidata (interwikilinks).

Initial rollout

A Wikipedia article's list of interlanguage links as they appeared in an edit box (left) and on the article's page (right) *prior* to Wikidata. Each link in these lists is to an article that requires its own list of interlanguage links to the other articles; this is the information centralized by Wikidata.



The "Edit links" link *nowadays* takes the reader to Wikidata to edit interlanguage and interwiki links.

Wikidata was launched on 29 October 2012 and was the first new project of the Wikimedia Foundation since 2006.[3][34][35] At this time, only the centralization of language links was available. This enabled items to be created and filled with basic information: a label – a name or title, aliases – alternative terms for the label, a description, and links to articles about the topic in all the various language editions of Wikipedia (interwikipedia links).

Historically, a Wikipedia article would include a list of interlanguage links (links to articles on the same topic in other editions of Wikipedia, if they existed). Wikidata was originally a self-contained repository of interlanguage links.[36] Wikipedia language editions were still not able to access Wikidata, so they needed to continue to maintain their own lists of interlanguage links.

On 14 January 2013, the Hungarian Wikipedia became the first to enable the provision of interlanguage links via Wikidata.[37] This functionality was extended to the Hebrew and Italian Wikipedias on 30 January, to the English Wikipedia on 13 February and to all other Wikipedias on 6 March.[38][39][40][41] After no consensus was reached over a proposal to restrict the removal of language links from the English Wikipedia,[42] they were automatically removed by bots. On 23 September 2013, interlanguage links went live on Wikimedia Commons.[43]

Statements and data access

On 4 February 2013, statements were introduced to Wikidata entries. The possible values for properties were initially limited to two data types (items and images on Wikimedia Commons), with more data types (such as coordinates and dates) to follow later. The first new type, string, was deployed on 6 March.[44]

The ability for the various language editions of Wikipedia to access data from Wikidata was rolled out progressively between 27 March and 25 April 2013.[45][46] On 16 September 2015, Wikidata began allowing so-called *arbitrary access*, or access from a given article of a Wikipedia to the statements on Wikidata items not directly connected to it. For example, it became possible to read data about Germany from the Berlin article, which was not feasible before.[47] On 27 April 2016, arbitrary access was activated on Wikimedia Commons.[48]

According to a 2020 study, a large proportion of the data on Wikidata consists of entries imported en masse from other databases by Internet bots, which helps to "break down the walls" of data silos.[49]

Query service and other improvements

On 7 September 2015, the Wikimedia Foundation announced the release of the Wikidata Query Service,[50] which lets users run queries on the data contained in Wikidata.[51] The service uses SPARQL as the query language. As of November 2018, there are at least 26 different tools that allow querying the data in different ways.[52] It uses Blazegraph as its triplestore and graph database.[53][54]

In 2021, Wikimedia Deutschland released the Query Builder,[55] "a form-based query builder to allow people who don't know how to use SPARQL" to write a query.

Logo

The bars on the logo contain the word "WIKI" encoded in Morse code.[56] It was created by Arun Ganesh and selected through community decision.[57]

Reception

In November 2014, Wikidata received the Open Data Publisher Award from the Open Data Institute "for sheer scale, and built-in openness".[58]

In December 2014, Google announced that it would shut down Freebase in favor of Wikidata.[59]

As of November 2018, Wikidata information was used in 58.4% of all English Wikipedia articles, mostly for external identifiers or coordinate locations. In aggregate, data from Wikidata is shown in 64% of all Wikipedias' pages, 93% of all Wikivoyage articles, 34% of all Wikiquotes', 32% of all Wikisources', and 27% of Wikimedia Commons.[60]

As of December 2020, Wikidata's data was visualized by at least 20 other external tools[61] and over 300 papers have been published about Wikidata.[62]

Applications

- Wikidata's structured dataset has been used by virtual assistants such as Apple's Siri and Amazon Alexa.[63][64]
- Mwnci extension can import data from Wikidata to LibreOffice Calc spreadsheets[65]
- KDE Itinerary – a privacy conscious open source travel assistant that uses data from Wikidata[66]
- Google originally started a frame semantic parser project that aims to parse the information on Wikipedia and transfer it into Wikidata by coming up with relevant statements using artificial intelligence.[67]
- MathQA – a mathematical question answering system[68]

A systematic literature review of the uses of Wikidata in research was carried out in 2019.[69]

See also

Internet portal

- Abstract Wikipedia
- BabelNet
- DBpedia
- Semantic MediaWiki
- Wikibase
- Wikimedia Enterprise

References

1. "Wikidata's tenth anniversary has been celebrated in Tamale, Ghana, by the Dagbani Wikimedians User Group and two of its sister communities" (https://diff.wikimedia.org/2022/11/18/wikidatas-tenth-anniversary-has-been-celebrated-in-tamale-ghana-by-the-dagbani-wikimedians-user-group-and-two-of-its-sister-communities/). 18 November 2022. Retrieved 4 October 2024. "Wikidata went live on October 29, 2012"
2. Chalabi, Mona (26 April 2013). "Welcome to Wikidata! Now what?" (https://www.theguardian.com/news/datablog/2013/apr/26/wikidata-launch). Archived (https://web.archive.org/web/20211002152920/https://www.theguardian.com/news/datablog/2013/apr/26/wikidata-launch) from the original on 2 October 2021. Retrieved 2 October 2021.
3. Wikidata (https://www.wikidata.org) (Archived (https://web.archive.org/web/20121029223351/http://www.wikidata.org/wiki/Wikidata:Main_Page) 29 October 2012 at the Wayback Machine)
4. "Data Revolution for Wikipedia" (http://www.wikimedia.de/wiki/Pressemitteilungen/PM_3_12_Wikidata_EN). Wikimedia Deutschland. 30 March 2012. Archived (https://web.archive.org/web/20121023170149/http://www.wikimedia.de/wiki/Pressemitteilungen/PM_3_12_Wikidata_EN) from the original on 23 October 2012. Retrieved 11 September 2012.
5. "Grafana" (https://grafana.wikimedia.org/d/000000175/wikidata-datamodel-statements?orgId=1&refresh=30m). *grafana.wikimedia.org*. Retrieved 21 March 2024.

6. Vrandečić, Denny; Pintscher, Lydia; Krötzsch, Markus (30 April 2023). "Wikidata: The Making of" (https://dl.acm.org/doi/10.1145/3543873.3585579). *Companion Proceedings of the ACM Web Conference 2023*. pp. 615–624. doi:10.1145/3543873.3585579 (https://doi.org/10.1145%2F3543873.3585579). ISBN 9781450394192. S2CID 258377705 (https://api.semanticscholar.org/CorpusID:258377705).
7. "Help:Statements – Wikidata" (https://www.wikidata.org/wiki/Help:Statements). *www.wikidata.org*. Archived (https://web.archive.org/web/20190325054926/https://www.wikidata.org/wiki/Help:Statements) from the original on 25 March 2019. Retrieved 20 February 2019.
8. "Help:Data type – Wikidata" (https://www.wikidata.org/wiki/Help:Data_type). *www.wikidata.org*. Archived (https://web.archive.org/web/20190323184623/https://www.wikidata.org/wiki/Help:Data_type) from the original on 23 March 2019. Retrieved 20 February 2019.
9. "Help:Sources – Wikidata" (https://www.wikidata.org/wiki/Help:Sources). *www.wikidata.org*. Archived (https://web.archive.org/web/20190417231251/https://www.wikidata.org/wiki/Help:Sources) from the original on 17 April 2019. Retrieved 20 February 2019.
10. "Help:Property constraints portal" (https://www.wikidata.org/wiki/Help:Property_constraints_portal). *Wikidata*. Archived (https://web.archive.org/web/20190601180538/https://www.wikidata.org/wiki/Help:Property_constraints_portal) from the original on 1 June 2019. Retrieved 20 February 2019.
11. Cochrane, Euan (30 September 2016). "Wikidata as a digital preservation knowledgebase" (https://openpreservation.org/blogs/wikidata-as-a-digital-preservation-knowledgebase/). *openpreservation.org*. Archived (https://web.archive.org/web/20220105110113/https://openpreservation.org/blogs/wikidata-as-a-digital-preservation-knowledgebase/) from the original on 5 January 2022. Retrieved 5 January 2022.
12. Samuel, John (15 August 2018). "Experimental IR Meets Multilinguality, Multimodality, and Interaction". *Experimental IR Meets Multilinguality, Multimodality, and Interaction*. CLEF 2018. Lecture Notes in Computer Science. Vol. 11018. p. 129. doi:10.1007/978-3-319-98932-7_12 (https://doi.org/10.1007%2F978-3-319-98932-7_12). ISBN 978-3-319-98931-0.
13. "Wikidata:Database reports/List of properties/Top100" (https://www.wikidata.org/wiki/Wikidata:Database_reports/List_of_properties/Top100). Archived (https://web.archive.org/web/20230224212120/https://www.wikidata.org/wiki/Wikidata:Database_reports/List_of_properties/Top100) from the original on 24 February 2023. Retrieved 18 November 2023.
14. Andreou, Marios (27 March 2019), "Lexemes" (https://oxfordbibliographies.com/view/document/obo-9780199772810/obo-9780199772810-0232.xml), *Linguistics*, Oxford University Press, doi:10.1093/obo/9780199772810-0232 (https://doi.org/10.1093%2Fobo%2F9780199772810-0232), ISBN 978-0-19-977281-0, retrieved 17 August 2024
15. Bonami, Olivier; Boyé, Gilles; Dal, Georgette; Giraudo, Hélène; Namer, Fiammetta (23 August 2018). *The Lexeme In Descriptive And Theoretical Morphology* (https://zenodo.org/record/1402520). [object Object]. doi:10.5281/zenodo.1402520 (https://doi.org/10.5281%2Fzenodo.1402520).
16. Nielsen, Finn Årup (2019), Hitzler, Pascal; Kirrane, Sabrina; Hartig, Olaf; de Boer, Victor (eds.), "Ordia: A Web Application for Wikidata Lexemes" (http://link.springer.com/10.1007/978-3-030-32327-1_28), *The Semantic Web: ESWC 2019 Satellite Events*, Lecture Notes in Computer Science, vol. 11762, Cham: Springer International Publishing, pp. 141–146, doi:10.1007/978-3-030-32327-1_28 (https://doi.org/10.1007%2F978-3-030-32327-1_28), ISBN 978-3-030-32326-4, retrieved 17 August 2024
17. "Wikidata:Lexicographical data/Documentation – Wikidata" (https://www.wikidata.org/wiki/Wikidata:Lexicographical_data/Documentation). *www.wikidata.org*. Archived (https://web.archive.org/web/20181113210533/https://www.wikidata.org/wiki/Wikidata:Lexicographical_data/Documentation) from the original on 13 November 2018. Retrieved 13 November 2018.
18. Nielsen, Finn (May 2020) [2020-05]. Ionov, Maxim; McCrae, John P.; Chiarcos, Christian; Declerck, Thierry; Bosque-Gil, Julia; Gracia, Jorge (eds.). "Lexemes in Wikidata: 2020 status" (https://aclanthology.org/2020.ldl-1.12/). *Proceedings of the 7th Workshop on Linked Data in Linguistics (LDL-2020)*. Marseille, France: European Language Resources Association: 82–86. ISBN 979-10-95546-36-8.

19. Werkmeister, Lucas (2018). *Schema Inference of Wikidata* (https://www.fiz-karlsruhe.de/sites/default/files/FIZ/Dokumente/Forschung/ISE/Masterarbeiten/master-thesis-Lucas-Werkmeister.pdf) (PDF). Karlsruhe: Fakultät für Informatik, Karlsruhe Institute of Technology.
20. Hernández, Daniel; Hogan, Aidan; Krötzsch, M. (2015). "Reifying RDF: What Works Well With Wikidata? (https://www.semanticscholar.org/paper/Reifying-RDF%3A-What-Works-Well-With-Wikidata-Hern%C3%A1ndez-Hogan/07b520b6ee7b86caa4331cd5365708f6a9647592)".
21. Erxleben, Fredo; Günther, Michael; Krötzsch, Markus; Mendez, Julian; Vrandečić, Denny (2014), "Introducing Wikidata to the Linked Data Web" (https://dx.doi.org/10.1007/978-3-319-11964-9_4), *Lecture Notes in Computer Science*, Cham: Springer International Publishing, pp. 50–65, doi:10.1007/978-3-319-11964-9_4 (https://doi.org/10.1007%2F978-3-319-11964-9_4), ISBN 978-3-319-11963-2, retrieved 18 August 2024
22. Thornton, Katherine; Solbrig, Harold; Stupp, Gregory S.; Labra Gayo, Jose Emilio; Mietchen, Daniel; Prud'hommeaux, Eric; Waagmeester, Andra (2019), Hitzler, Pascal; Fernández, Miriam; Janowicz, Krzysztof; Zaveri, Amrapali (eds.), "Using Shape Expressions (ShEx) to Share RDF Data Models and to Guide Curation with Rigorous Validation", *The Semantic Web*, vol. 11503, Cham: Springer International Publishing, pp. 606–620, doi:10.1007/978-3-030-21348-0_39 (https://doi.org/10.1007%2F978-3-030-21348-0_39), ISBN 978-3-030-21347-3
23. "Extension:EntitySchema – MediaWiki" (https://www.mediawiki.org/wiki/Extension:EntitySchema). *mediawiki.org*. Archived (https://web.archive.org/web/20210625050439/https://www.mediawiki.org/wiki/Extension:EntitySchema) from the original on 25 June 2021. Retrieved 10 September 2021.
24. "Initial empty repository" (https://gerrit.wikimedia.org/r/plugins/gitiles/mediawiki/extensions/EntitySchema/+/26654db17345beefbd5518af48ed1bcd17288bc9). *Gerrit*. 15 January 2019. Archived (https://web.archive.org/web/20220319091240/https://gerrit.wikimedia.org/r/plugins/gitiles/mediawiki/extensions/EntitySchema/+/26654db17345beefbd5518af48ed1bcd17288bc9) from the original on 19 March 2022. Retrieved 12 June 2022.
25. "Version – Wikidata" (https://www.wikidata.org/wiki/Special:Version). *Wikidata.org*. Archived (https://web.archive.org/web/20211019080834/https://www.wikidata.org/wiki/Special:Version) from the original on 19 October 2021. Retrieved 10 September 2021.
26. Chisholm, Andrew; Radford, Will; Hachey, Ben (April 2017). Lapata, Mirella; Blunsom, Phil; Koller, Alexander (eds.). "Learning to generate one-sentence biographies from Wikidata" (https://aclanthology.org/E17-1060/). *Proceedings of the 15th Conference of the European Chapter of the Association for Computational Linguistics: Volume 1, Long Papers*. Valencia, Spain: Association for Computational Linguistics: 633–642. arXiv:1702.06235 (https://arxiv.org/abs/1702.06235).
27. Turki, Houcemeddine; Shafee, Thomas; Hadj Taieb, Mohamed Ali; Ben Aouicha, Mohamed; Vrandečić, Denny; Das, Diptanshu; Hamdi, Helmi (November 2019). "Wikidata: A large-scale collaborative ontological medical database" (https://zenodo.org/record/3461198). *Journal of Biomedical Informatics*. **99**: 103292. doi:10.1016/j.jbi.2019.103292 (https://doi.org/10.1016%2Fj.jbi.2019.103292). PMID 31557529 (https://pubmed.ncbi.nlm.nih.gov/31557529).
28. Zhao, Fudie (31 May 2023). "A systematic review of Wikidata in Digital Humanities projects" (https://doi.org/10.1093%2Fllc%2Ffqac083). *Digital Scholarship in the Humanities*. **38** (2): 852–874. doi:10.1093/llc/fqac083 (https://doi.org/10.1093%2Fllc%2Ffqac083).
29. Nielsen, Finn Årup; Mietchen, Daniel; Willighagen, Egon (2017). "Scholia, Scientometrics and Wikidata" (https://backend.orbit.dtu.dk/ws/files/139322959/460065_Print.pdf) (PDF). *The Semantic Web: ESWC 2017 Satellite Events*. Lecture Notes in Computer Science. Vol. 10577. pp. 237–259. doi:10.1007/978-3-319-70407-4_36 (https://doi.org/10.1007%2F978-3-319-70407-4_36). ISBN 978-3-319-70406-7.
30. Pellissier Tanon, Thomas; Vrandečić, Denny; Schaffert, Sebastian; Steiner, Thomas; Pintscher, Lydia (11 April 2016). "From Freebase to Wikidata: The Great Migration" (https://dl.acm.org/doi/10.1145/2872427.2874809). *Proceedings of the 25th International Conference on World Wide Web*. WWW '16. Republic and Canton of Geneva, CHE: International World Wide Web Conferences Steering Committee. pp. 1419–1428. doi:10.1145/2872427.2874809 (https://doi.org/10.1145%2F2872427.2874809). ISBN 978-1-4503-4143-1.

31. Dickinson, Boonsri (30 March 2012). "Paul Allen Invests In A Massive Project To Make Wikipedia Better" (http://www.businessinsider.com/paul-allen-invests-in-wikidata-project-2012-3?IR=T). *Business Insider*. Archived (https://web.archive.org/web/20171223215904/http://www.businessinsider.com/paul-allen-invests-in-wikidata-project-2012-3?IR=T) from the original on 23 December 2017. Retrieved 11 September 2012.
32. Perez, Sarah (30 March 2012). "Wikipedia's Next Big Thing: Wikidata, A Machine-Readable, User-Editable Database Funded By Google, Paul Allen And Others" (https://techcrunch.com/2012/03/30/wikipedias-next-big-thing-wikidata-a-machine-readable-user-editable-database-funded-by-google-paul-allen-and-others/). *TechCrunch*. Archived (https://web.archive.org/web/20121005062200/http://techcrunch.com/2012/03/30/wikipedias-next-big-thing-wikidata-a-machine-readable-user-editable-database-funded-by-google-paul-allen-and-others/) from the original on 5 October 2012. Retrieved 11 September 2012.
33. "Wikidata – Meta" (https://meta.wikimedia.org/wiki/Wikidata). *meta.wikimedia.org*. Archived (https://web.archive.org/web/20120407213951/http://meta.wikimedia.org/wiki/Wikidata) from the original on 7 April 2012. Retrieved 8 November 2015.
34. Pintscher, Lydia (30 October 2012). "wikidata.org is live (with some caveats)" (https://lists.wikimedia.org/pipermail/wikidata-l/2012-October/001151.html). *wikidata-l* (Mailing list). Retrieved 3 November 2012.
35. Roth, Matthew (30 March 2012). "The Wikipedia data revolution" (https://diff.wikimedia.org/2012/03/30/the-wikipedia-data-revolution/). Wikimedia Foundation. Archived (https://web.archive.org/web/20200731012340/https://diff.wikimedia.org/2012/03/30/the-wikipedia-data-revolution/) from the original on 31 July 2020. Retrieved 11 September 2012.
36. Leitch, Thomas (1 November 2014). *Wikipedia U: Knowledge, Authority, and Liberal Education in the Digital Age*. Johns Hopkins University Press. p. 120 (https://books.google.com/books?id=lUxjBAAAQBAJ&pg=PA120). ISBN 978-1-4214-1550-5.
37. Pintscher, Lydia (14 January 2013). "First steps of Wikidata in the Hungarian Wikipedia" (http://blog.wikimedia.de/2013/01/14/first-steps-of-wikidata-in-the-hungarian-wikipedia/). Wikimedia Deutschland. Archived (https://web.archive.org/web/20151214085628/https://blog.wikimedia.de/2013/01/14/first-steps-of-wikidata-in-the-hungarian-wikipedia/) from the original on 14 December 2015. Retrieved 17 December 2015.
38. Pintscher, Lydia (30 January 2013). "Wikidata coming to the next two Wikipedias" (http://blog.wikimedia.de/2013/01/30/wikidata-coming-to-the-next-two-wikipedias/). Wikimedia Deutschland. Archived (https://web.archive.org/web/20181004022937/http://blog.wikimedia.de/2013/01/30/wikidata-coming-to-the-next-two-wikipedias/) from the original on 4 October 2018. Retrieved 31 January 2013.
39. Pintscher, Lydia (13 February 2013). "Wikidata live on the English Wikipedia" (http://blog.wikimedia.de/2013/02/13/wikidata-live-on-the-english-wikipedia/). Wikimedia Deutschland. Archived (https://web.archive.org/web/20130219054033/http://blog.wikimedia.de/2013/02/13/wikidata-live-on-the-english-wikipedia/) from the original on 19 February 2013. Retrieved 15 February 2013.
40. Pintscher, Lydia (6 March 2013). "Wikidata now live on all Wikipedias" (http://blog.wikimedia.de/2013/03/06/wikidata-now-live-on-all-wikipedias/). Wikimedia Deutschland. Archived (https://web.archive.org/web/20130414150512/http://blog.wikimedia.de/2013/03/06/wikidata-now-live-on-all-wikipedias/) from the original on 14 April 2013. Retrieved 8 March 2013.
41. "Wikidata ist für alle Wikipedien da" (http://www.golem.de/news/onlineenzyklopaedie-wikidata-ist-fuer-alle-wikipedien-da-1304-98941.html) (in German). Golem.de. Archived (https://web.archive.org/web/20181106213849/https://www.golem.de/news/onlineenzyklopaedie-wikidata-ist-fuer-alle-wikipedien-da-1304-98941.html) from the original on 6 November 2018. Retrieved 29 January 2014.
42. "Wikipedia talk:Wikidata interwiki RFC" (https://en.wikipedia.org/w/index.php?title=Wikipedia_talk:Wikidata_interwiki_RFC&oldid=547663432). 29 March 2013. Archived (https://web.archive.org/web/20211018115922/https://en.wikipedia.org/w/index.php?title=Wikipedia_talk%3AWikidata_interwiki_RFC&oldid=547663432) from the original on 18 October 2021. Retrieved 30 March 2013.

43. Pintscher, Lydia (23 September 2013). "Wikidata is Here!" (https://commons.wikimedia.org/wiki/Commons:Village_pump/Archive/2013/10#Wikidata_is_here.21). Commons:Village pump. Archived (https://web.archive.org/web/20211206060438/https://commons.wikimedia.org/wiki/Commons:Village_pump/Archive/2013/10#Wikidata_is_here.21) from the original on 6 December 2021. Retrieved 30 August 2016.
44. Pintscher, Lydia. "Wikidata/Status updates/2013 03 01" (https://meta.wikimedia.org/wiki/Wikidata/Status_updates/2013_03_01). *Wikimedia Meta-Wiki*. Wikimedia Foundation. Archived (https://web.archive.org/web/20130412004917/http://meta.wikimedia.org/wiki/Wikidata/Status_updates/2013_03_01) from the original on 12 April 2013. Retrieved 3 March 2013.
45. Pintscher, Lydia (27 March 2013). "You can have all the data!" (http://blog.wikimedia.de/2013/03/27/you-can-have-all-the-data/). Wikimedia Deutschland. Archived (https://web.archive.org/web/20130329234058/http://blog.wikimedia.de/2013/03/27/you-can-have-all-the-data/) from the original on 29 March 2013. Retrieved 28 March 2013.
46. "Wikidata goes live worldwide" (https://web.archive.org/web/20140101031329/http://www.h-online.com/open/news/item/Wikidata-goes-live-worldwide-1849479.html). The H. 25 April 2013. Archived from the original (http://h-online.com/-1849479) on 1 January 2014.
47. Pintscher, Lydia (16 September 2015). "Wikidata: Access to data from arbitrary items is here" (https://en.wikipedia.org/wiki/Wikipedia:Village_pump_(technical)/Archive_140#Wikidata:_Access_to_data_from_arbitrary_items_is_here). Wikipedia:Village pump (technical). Archived (https://web.archive.org/web/20160927063804/https://en.wikipedia.org/wiki/Wikipedia:Village_pump_(technical)/Archive_140#Wikidata:_Access_to_data_from_arbitrary_items_is_here) from the original on 27 September 2016. Retrieved 30 August 2016.
48. Pintscher, Lydia (27 April 2016). "Wikidata support: arbitrary access is here" (https://commons.wikimedia.org/wiki/Commons:Village_pump/Archive/2016/05#Wikidata_support:_arbitrary_access_is_here). Commons:Village pump. Archived (https://web.archive.org/web/20170205224443/https://commons.wikimedia.org/wiki/Commons:Village_pump/Archive/2016/05#Wikidata_support:_arbitrary_access_is_here) from the original on 5 February 2017. Retrieved 30 August 2016.
49. Waagmeester, Andra; Stupp, Gregory; Burgstaller-Muehlbacher, Sebastian; et al. (17 March 2020). "Wikidata as a knowledge graph for the life sciences" (https://elifesciences.org/articles/52614). *eLife*. **9**. doi:10.7554/ELIFE.52614 (https://doi.org/10.7554%2FELIFE.52614). ISSN 2050-084X (https://search.worldcat.org/issn/2050-084X). PMC 7077981 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7077981). PMID 32180547 (https://pubmed.ncbi.nlm.nih.gov/32180547). Wikidata Q87830400.
50. "Home" (https://query.wikidata.org/). *query.wikidata.org*. Archived (https://web.archive.org/web/20161107202911/https://query.wikidata.org/) from the original on 7 November 2016. Retrieved 30 January 2019.
51. "[Wikidata] Announcing the release of the Wikidata Query Service - Wikidata - lists.wikimedia.org" (https://lists.wikimedia.org/pipermail/wikidata/2015-September/007042.html). Archived (https://web.archive.org/web/20151110040230/https://lists.wikimedia.org/pipermail/wikidata/2015-September/007042.html) from the original on 10 November 2015. Retrieved 13 November 2018.
52. "Wikidata:Tools/Query data – Wikidata" (https://www.wikidata.org/wiki/Wikidata:Tools/Query_data). *www.wikidata.org*. Archived (https://web.archive.org/web/20200531044004/https://www.wikidata.org/wiki/Wikidata:Tools/Query_data) from the original on 31 May 2020. Retrieved 13 November 2018.
53. "[Wikidata-tech] Wikidata Query Backend Update (take two!)" (https://lists.wikimedia.org/pipermail/wikidata-tech/2015-March/000740.html). *lists.wikimedia.org*. Archived (https://web.archive.org/web/20210106191817/https://lists.wikimedia.org/pipermail/wikidata-tech/2015-March/000740.html) from the original on 6 January 2021. Retrieved 29 August 2018. (The message also contains a link to the graph databases comparison performed by Wikimedia.)
54. 86 (https://github.com/blazegraph/database/issues/86) on GitHub
55. "Wikidata Query Builder" (https://query.wikidata.org/querybuilder/). *query.wikidata.org*.
56. commons:File talk:Wikidata-logo-en.svg#Hybrid. Retrieved 2016-10-06.

57. "Und der Gewinner ist..." (https://blog.wikimedia.de/2012/07/13/und-der-gewinner-ist/) 13 July 2012. Archived (https://web.archive.org/web/20210121061656/https://blog.wikimedia.de/2012/07/13/und-der-gewinner-ist/) from the original on 21 January 2021. Retrieved 16 June 2020.
58. "First ODI Open Data Awards presented by Sirs Tim Berners-Lee and Nigel Shadbolt" (https://web.archive.org/web/20160324003214/http://theodi.org/news/first-odi-open-data-awards-presented-by-sir-tim-berners-lee-and-sir-nigel-shadbolt). *Open Data Institute*. Archived from the original (http://theodi.org/news/first-odi-open-data-awards-presented-by-sir-tim-berners-lee-and-sir-nigel-shadbolt) on 24 March 2016.
59. "Freebase" (https://web.archive.org/web/20190320195748/https://plus.google.com/109936836907132434202/posts/bu3z2wVqcQc). *Google Plus*. 16 December 2014. Archived from the original (https://plus.google.com/109936836907132434202/posts/bu3z2wVqcQc) on 20 March 2019.
60. "Percentage of articles making use of data from Wikidata" (https://web.archive.org/web/20181115114237/http://wdcm.wmflabs.org/WD_percentUsageDashboard/). Archived from the original (http://wdcm.wmflabs.org/WD_percentUsageDashboard/) on 15 November 2018. Retrieved 15 November 2018.
61. "Wikidata:Tools/Visualize data – Wikidata" (https://www.wikidata.org/wiki/Wikidata:Tools/Visualize_data). *www.wikidata.org*. Archived (https://web.archive.org/web/20181115112950/https://www.wikidata.org/wiki/Wikidata:Tools/Visualize_data) from the original on 15 November 2018. Retrieved 15 November 2018.
62. "Scholia" (https://scholia.toolforge.org/topic/Q2013). *Scholia*. Archived (https://web.archive.org/web/20210930185838/https://scholia.toolforge.org/topic/Q2013) from the original on 30 September 2021. Retrieved 2 August 2021.
63. Simonite, Tom (18 February 2019). "Inside the Alexa-Friendly World of Wikidata" (https://www.wired.com/story/inside-the-alexa-friendly-world-of-wikidata/). *Wired*. ISSN 1059-1028 (https://search.worldcat.org/issn/1059-1028). Retrieved 25 December 2020.
64. Merhav, Yuval; Ash, Steve (8 August 2018). "Automatic transliteration can help Alexa find data across language barriers" (https://www.amazon.science/blog/automatic-transliteration-can-help-alexa-find-data-across-language-barriers). *Amazon Science*. Retrieved 3 February 2025.
65. "Rob Barry / Mwnci – Deep Spreadsheets" (https://gitlab.com/muishkin/mwnci---deep-spreadsheets). *GitLab*. Archived (https://web.archive.org/web/20190921132219/https://gitlab.com/muishkin/mwnci---deep-spreadsheets/) from the original on 21 September 2019. Retrieved 21 September 2019.
66. Krause, Volker (12 January 2020), *KDE Itinerary – A privacy by design travel assistant* (https://media.ccc.de/v/36c3-59-kde-itinerary-a-privacy-by-design-travel-assistant#t=33), archived (https://web.archive.org/web/20200626012643/https://media.ccc.de/v/36c3-59-kde-itinerary-a-privacy-by-design-travel-assistant#t=33) from the original on 26 June 2020, retrieved 10 November 2020
67. sling (https://github.com/google/sling) on GitHub
68. Scharpf, P. Schubotz, M. Gipp, B. Mining Mathematical Documents for Question Answering via Unsupervised Formula Labeling (https://www.gipp.com/wp-content/papercite-data/pdf/scharpf2022.pdf) Archived (https://web.archive.org/web/20230210114012/https://www.gipp.com/wp-content/papercite-data/pdf/scharpf2022.pdf) 10 February 2023 at the Wayback Machine ACM/IEEE Joint Conference on Digital Libraries, 2022.
69. Mora-Cantallops, Marçal; Sánchez-Alonso, Salvador; García-Barriocanal, Elena (2 September 2019). "A systematic literature review on Wikidata". *Data Technologies and Applications*. **53** (3): 250–268. doi:10.1108/DTA-12-2018-0110 (https://doi.org/10.1108%2FDTA-12-2018-0110). S2CID 202036639 (https://api.semanticscholar.org/CorpusID:202036639).

Further reading

- Mark Graham (6 April 2012), "The Problem With Wikidata" (https://www.theatlantic.com/technology/archive/2012/04/the-problem-with-wikidata/255564/), *The Atlantic*, US
- Claudia Müller-Birn, Benjamin Karran, Janette Lehmann, Markus Luczak-Rösch: *Peer-production system or collaborative ontology development effort: What is Wikidata? (http://eprints.soton.ac.uk/377397/1/paper-1.pdf)* In, OpenSym 2015 – Conference on Open Collaboration, San Francisco, US, 19 – 21 Aug 2015 (preprint).

External links

- Official website (https://wikidata.org/)
- Videos: WikidataCon (https://media.ccc.de/b/conferences/wikidatacon) on *media.ccc.de*
- Wikidata Query Builder (https://query.wikidata.org/querybuilder/?)

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